5. PAPER RECEIVING AREA

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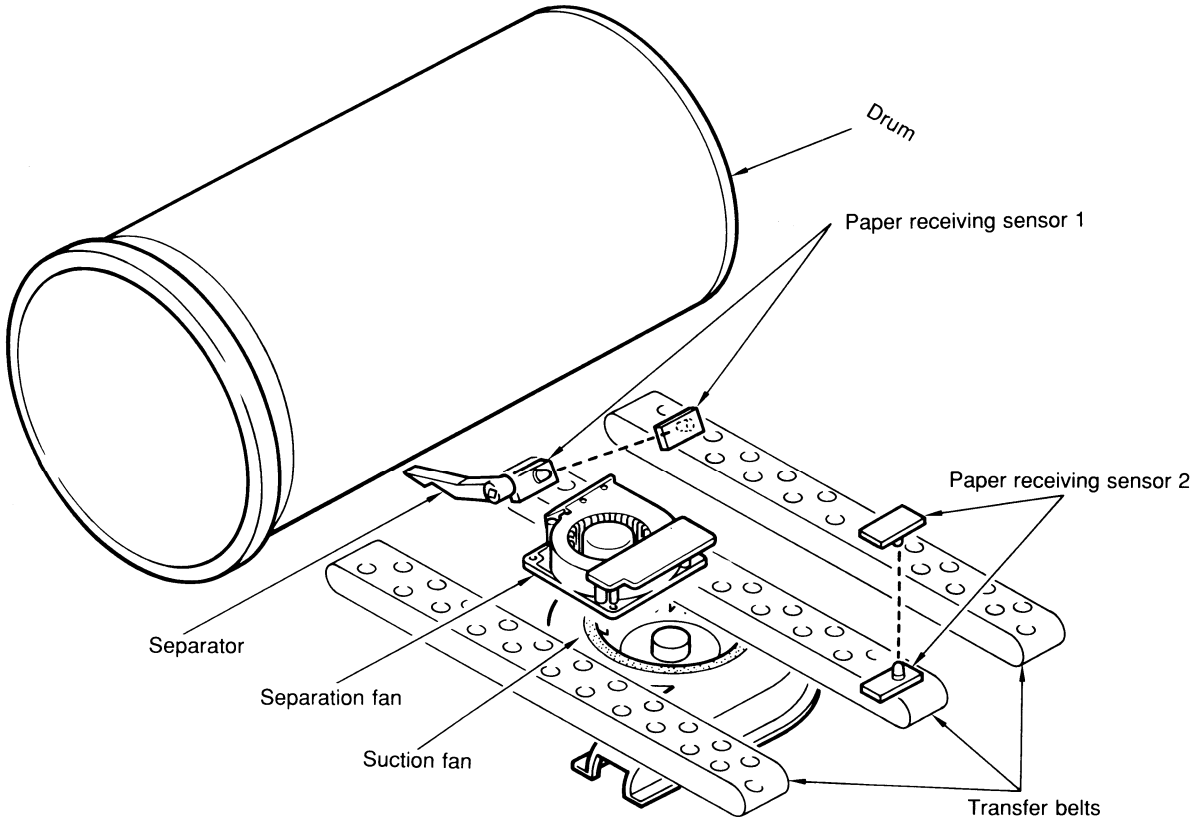
Operation and Function

The Separator and Separation fan are used in the paper ejection section to separate the printed paper from the Drum.
Once the printed paper is separated, the Suction fan attracts the paper to the Transfer belts, and the belts transport the paper to the Paper receiving tray.

During this process, the Paper receiving sensor 1 and Paper receiving sensor 2 in the paper receiving section check paper status for correct paper transportation to the receiving tray.



1. Paper Ejection Section

[Theory of Operation]

1. Separator Positioning System

- Motion of Separator

The Separator, which is mounted on the Separator shaft is normally in a position close to the Drum screen to remove a printed paper.

The Separator moves down and away from the Drum in order to provide clearance for the Clamp section on the Drum.

During operation, this downward motion of the Separator is produced by the rotation of the Separator shaft, which is driven by the Separator lever.

- Home position of Separator

The Separator lever, which is attached to the end of the Separator shaft, has a collar on the left end which is held close to the left-side Drum body support, and on the right end the lever is kept pressed on the Separator adjustment cam by spring tension.

The left-side Drum body support functions as a cam for the Separator collar, which operates the Separator lever.

- Positioning for the clearance for the Clamp section

When the Drum rotates and the Clamp section approaches the Separator, the high point on the left-side Drum body support pushes the Separator collar downward, shifting the Separator down and away from the Drum.

When the Clamp section clears, the spring tension on the Separator lever raises the Separator to the Drum to remove a printed paper.

- Motion of Separator in Drum removal

The Separator must also be lowered when the Drum is removed to avoid damage to the screen.

When the Drum is locked into position, the Drum frame presses against the Release lever and the Separator can operate as described above.

When the Drum is removed, the Release lever is pulled back by the Release spring.

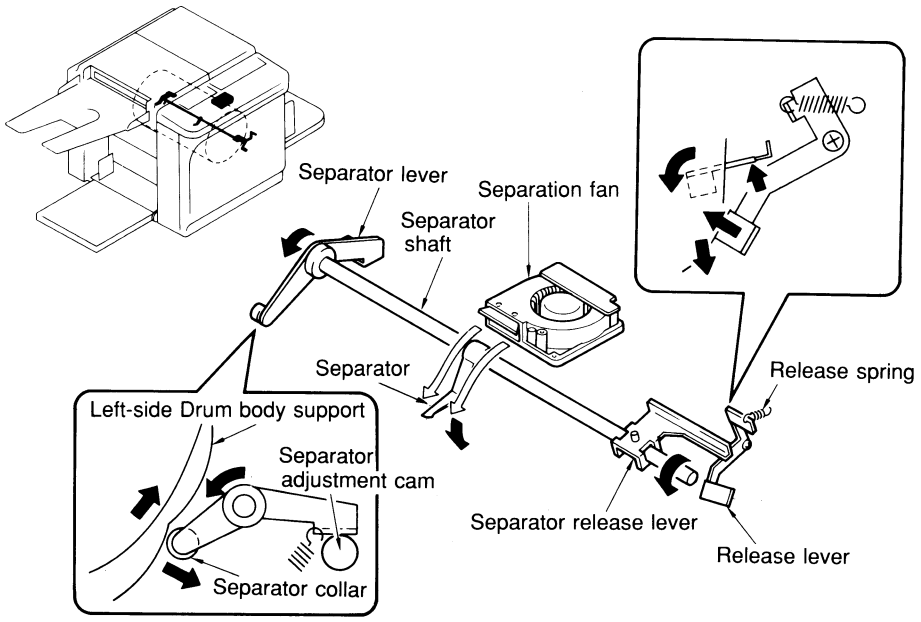
This causes the Release lever to rise contacting the Separator release lever, which moves the Separator release lever in an upward motion.

This action rotates the Separator shaft down (counterclockwise) lowering the Separator.

- Function of Separation fan

During printing, the Separation fan blows air to the lead edge of the printed paper on the Drum from above the Separator.

This blow of air assists the Separator to separate the printed paper from the Drum.



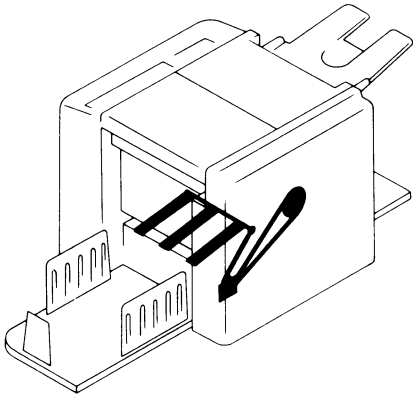
2. Paper Ejection System

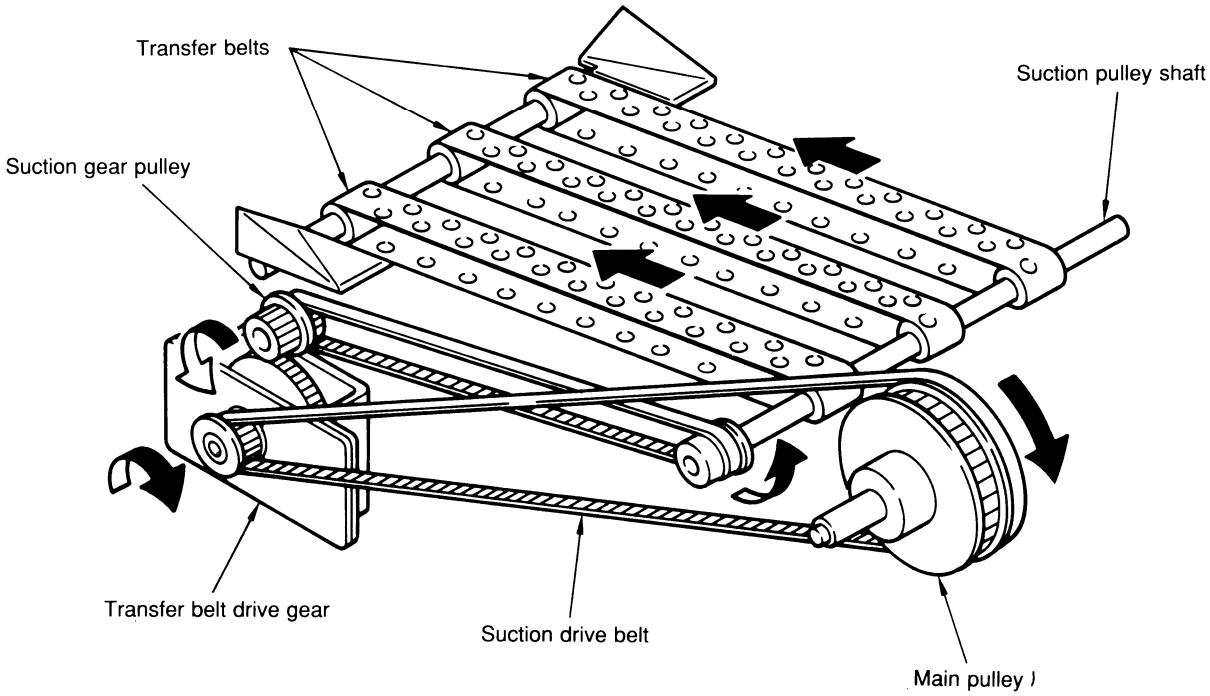
- Paper transfer by belts

When the Main pulley rotates, the Tranfer belt drive gear rotates via the Suction drive belt. The rotation drives the Suction gear pulley of the Suction unit and the Suction pulley shaft which drives the Transfer belts to transport the printed paper to the Paper receiving tray.

- Function of Suction fan

The Suction fan unit draws the printed paper to the Transfer belts and the paper being held to the Transfer belts by suction is delivered to the Paper receiving tray.





3. Paper Ejection Check System

The following 3 kinds of paper ejection troubles are detected in the paper receiving area.

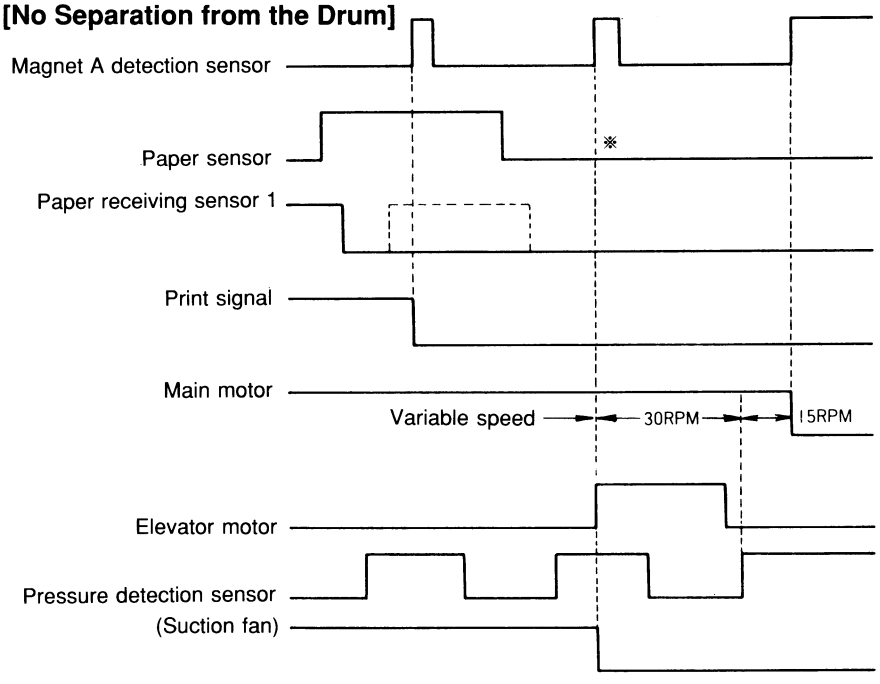
1. **[Paper can't be separated from the Drum but stuck onto it.]**
   During printing, the status of the Paper receiving sensor 1 is checked at each detection of Magnet A.
   – Check system –
   1) If the light path of the Paper sensor is blocked but that of the Paper receiving sensor 1 isn't at a Magnet A detection, paper feed is immediately stopped with interruption of the Print signal.
   2) At the next Magnet A detection, it is checked if the light path of the Paper sensor is blocked. If not, it is judged that the paper was not separated from the Drum but stuck onto it, and the paper ejection jam message is displayed on the panel.
   3) The Elevator motor turns on lowering the paper feed tray for 2 seconds, and the drum stops on the third Magnet A detection.

2. **[Paper jam around Paper receiving sensor 1]**
   – Check system –
   1) If the light path of the Paper receiving sensor 1 is blocked when that of the Pressure detection sensor has just been blocked by the Pressure disc during printing, it is judged that paper jammed around the Paper receiving sensor 1, and paper feed is immediately stopped.
   2) At the next Magnet A detection, the Drum stops and the paper ejection jam message is displayed on the panel.

3. **[Paper jam around Paper receiving sensor 2]**
   – Check system –
   1) If the light path of the Paper receiving sensor 2 has been blocked until that of the Paper receiving sensor 1 was blocked twice, it is judged that paper has jammed around the Paper receiving sensor 2 and paper feed is immediately stopped.
   2) At the next Magnet A detection, the Suction fan is stopped, and at the third one, the Drum is stopped and the paper ejection jam message is displayed on the panel.

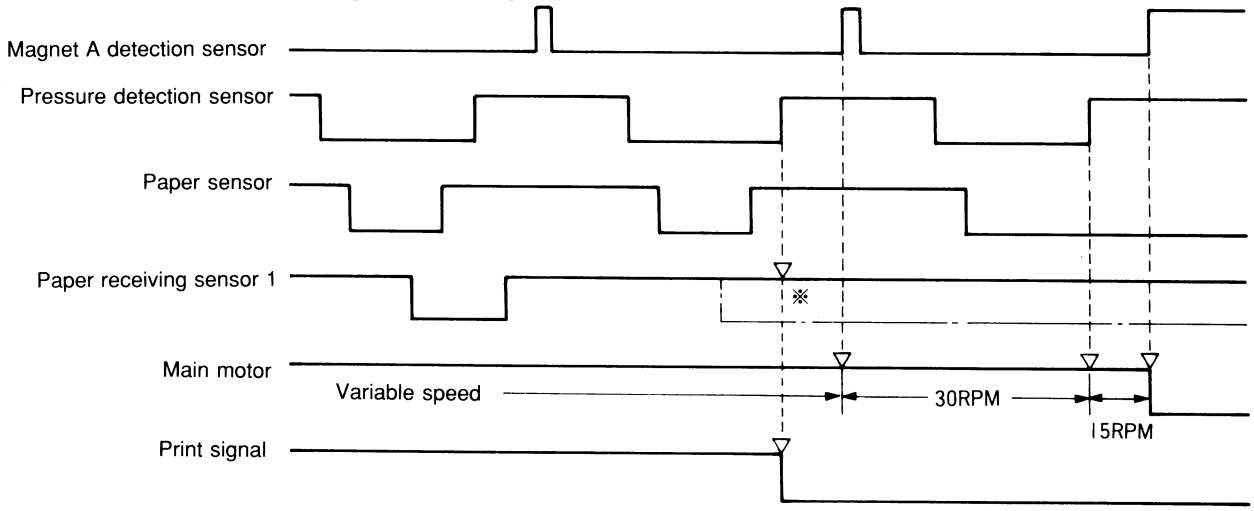
Paper Ejection Check System

(1) [No Separation from the Drum]



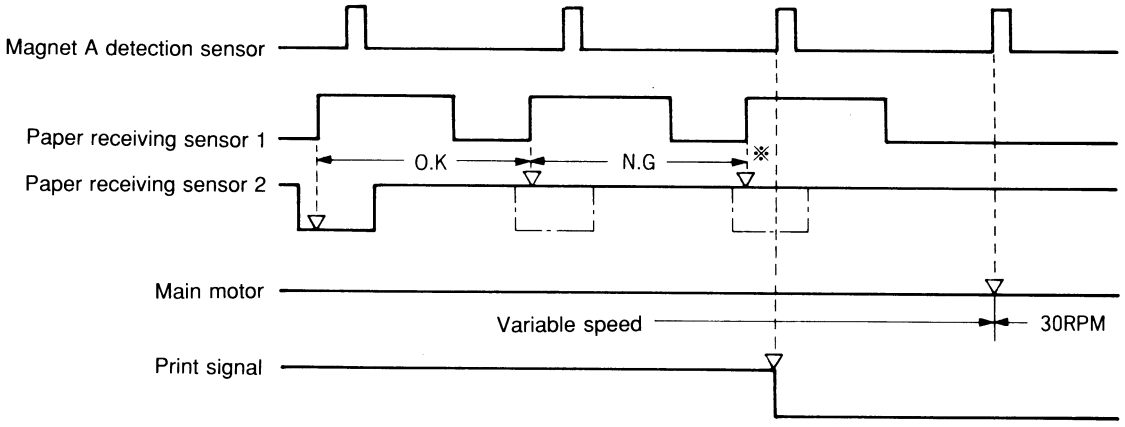
Paper Ejection Check System

(2) [Paper Jam around Paper receiving sensor 1]

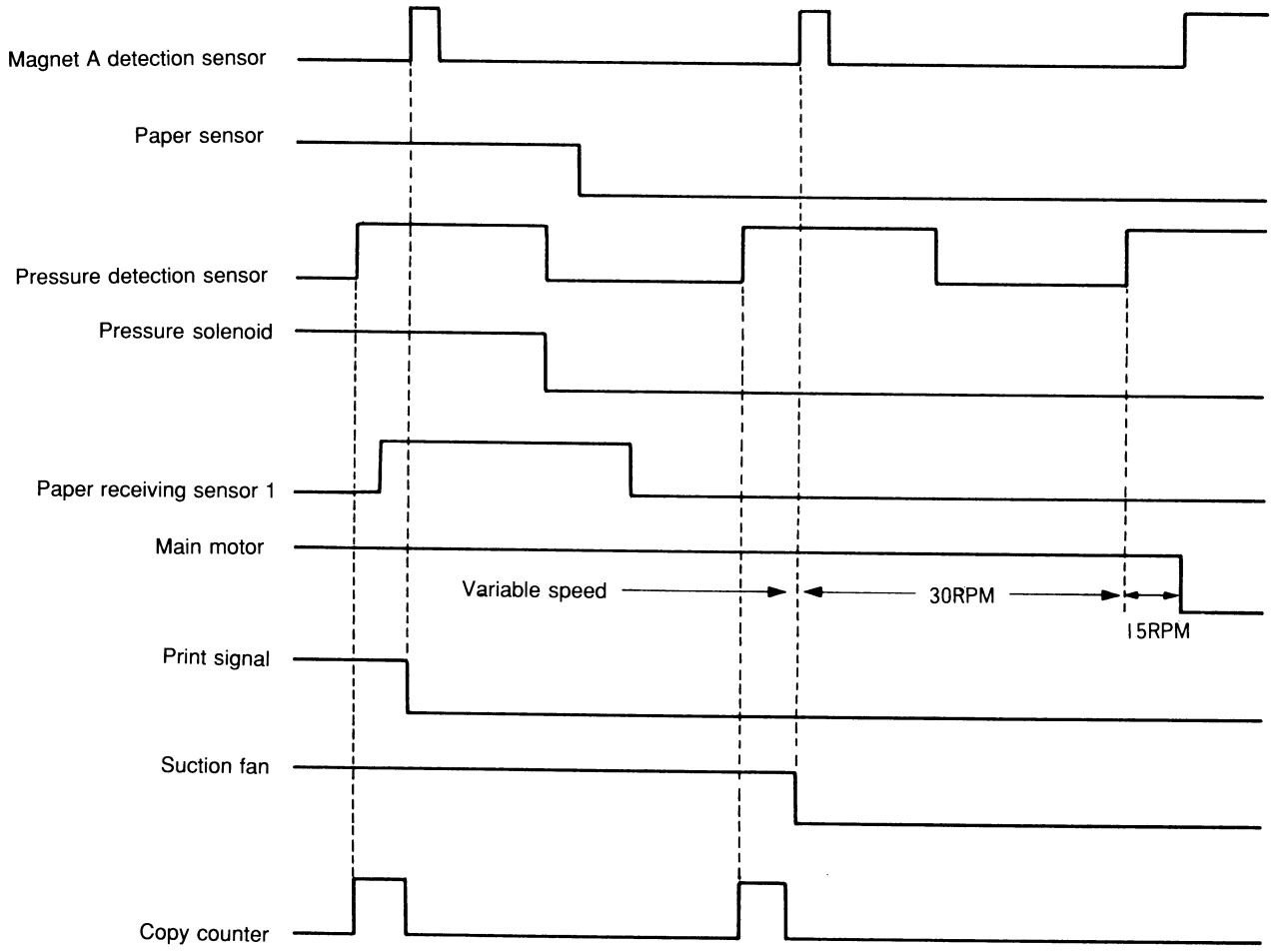


※ Where concluded that paper has jammed around the Paper receiving sensor 1.

(3) [Paper Jam around Paper receiving sensor 2]



※ Where concluded that paper has jammed around the Paper receiving sensor 2.

Total Timing Chart in Paper Ejection Section

– End of print cycle –